

**VARIABLE OUTPUT POWER SUPPLY****Abstract of the Disclosure**

A variable output power supply for use in a highly efficient linear amplification system includes an envelope detector having at least one input for receiving an input signal to be amplified. The envelope detector generates, as an output, a control signal that is representative of an envelope of the input signal. The variable output power supply further includes a controllable source that is coupled to the envelope detector. The controllable source generates an output voltage and/or current that is responsive to the control signal, such that the output of the variable output power supply dynamically changes as a function of the envelope of the input signal. When employed in a linear amplification system, the variable output power supply provides a supply voltage to a linear amplifier which can be dynamically varied in response to the envelope of the input signal so as to provide a substantially constant voltage supply headroom for the amplifier. In this manner, an efficiency and frequency response of the amplification system is improved, and a reduction in overall power dissipation of the amplification system can be achieved.